The name "Xanadu" and the Flaming-X symbol are software and service trademarks of Project Xanadu, registered in certain countries and claimed elsewhere.

What is Xanadu?

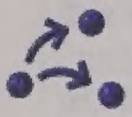
We need a way for people to store information not as individual "files" but as a connected literature. It must be possible to create, access and manipulate this literature of richly formatted and connected information cheaply, reliably and securely from anywhere in the world. Documents must remain accessible indefinitely, safe from any kind of loss, damage, modification, censorship or removal except by the owner. It must be impossible to falsify ownership or track individual readers of any document.

This system of literature (the "Xanadu Docuverse") must allow people to create virtual copies ("transclusions") of any existing collection of information in the system **regardless of ownership**. In order to make this possible, the system must guarantee that the owner of any information will be paid their chosen royalties on any portions of their documents, no matter how small, whenever and wherever they are used.

- General Information about Xanadu (FAQ and other essential reading)
- The Xanadu Archive (other documents of interest)
- Media Coverage Archive

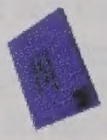
- Xanadu-related Projects

- Project Xanadu
- Home Page of Ted Nelson (Local Mirror)
- Xanadu Resources
- Related Sites



- Xanadu People

- Xanadu, the music
- Audio and Video clips



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Ted Nelson to Reveal All at Perl Conference

by Michael Swaine
July 16, 1999

I was trading e-mail yesterday with the legendary Ted Nelson. Back in 1960, seeing the computer as principally a media machine, Ted—but let me let him say it—"sought a generalization of media which would bypass the limitations of paper. My proposal for cross-connecting all media with two connection types—links and transclusions—is the Xanadu architecture."

Xanadu is a concept more ambitious than the World Wide Web, and has been struggling toward realization for decades. Along the way, it has spawned a number of interesting technologies, among them enfilades, the Ent, and, quite recently, a product called ZigZag.

Enfilades are a class of data structures and their corresponding algorithms. Beyond that, I am at a loss to say what they are, except that they are an important part of Xanadu.

The Ent is a data structure plus algorithms to manage complex versioning of arbitrary objects with low overhead and great parsimony. Complex versioning is a feature of Xanadu.

ZigZag is a shareware program that runs on Linux or any platform that supports Perl 5. It is a hyperstructure kit, but you can download it and figure it out for yourself. It currently has nothing directly to do with Xanadu, so far as I can tell, but that may soon change.

The subject of our e-mail was the fact that Ted will be speaking at the O'Reilly Open Source Convention—Perl Conference 3.0 in Monterey, California, August 21-24. The tentative title of his talk is "Open Source Xanadu: Enfilades Revealed."

This will be the first public presentation of recent Xanadu internals,

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XML

eCommerce
Advertising
Legal
Storefronts

Multimedia
Audio/Video
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Shockwave

Site Management
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Ted tells me. He will explain, as far as possible in the half hour he's been given, enfilade theory and the resulting architecture of the two Xanadu systems that were sponsored by Autodesk during its ownership of Xanadu. All that code is being made open.

The goal of opening Xanadu source is to get help in creating a new Xanadu. Ted says, "The new Xanadu is planned to have the old structure [generalized for net addressing] underneath, ZigZag *way* underneath as a general rational programming structure, and spectacular eye-popping interactive stuff at the top that will change the definition of interactive text forever."

If you've never heard Ted speak, it's worth going to the conference for his talk alone. I'll be there.

Oh, the Perl stuff should be interesting too.

-oo-

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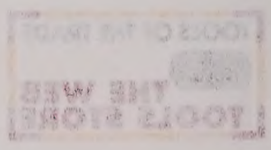

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To Ted Nelson Home Page
To Project Xanadu Home Page

Project Xanadu*

* "Xanadu" is an internationally registered trademark.

Project Xanadu is the name for Ted Nelson's hypertext work since 1960. For the period 1988-92, Project Xanadu was owned by XOC, Inc., which was a subsidiary of Autodesk, Inc., makers of AutoCad(R). However, Project Xanadu is no longer connected officially with XOC, Inc., or with the software developed there.

We foresaw world-wide hypertext, clearly and specifically, even in the sixties when almost nobody could imagine hypertext. No one else did. We knew millions of people would want to publish hypertext on computer networks, and assuring this freedom for everyone to publish was always part of the Xanadu vision. Making it happen was our commitment to freedom.

However, contrary to legend, Project Xanadu was NOT trying to create the World Wide Web. The World Wide Web is precisely what we were trying to PREVENT. We long ago foresaw the problems of one-way links, links that break (no guaranteed long-term publishing), no way to publish comments, no version management, no rights management. All these were built into the Xanadu design.

That Xanadu design is not dead, just being redefined for today's realities.

We were right about the power of world-wide hypertext, as anyone can see. If only people understood that we were right about the rest of the structure, which is necessary now more than ever. And we believe that same structure can be rebuilt, even with the Web as it is now.

Xanadu Structure

Xanadu is a specific structure which we want everyone to understand, both as an abstraction and as an answer to what is still wrong with the Web.

The Influence of Project Xanadu

It's true that Tim Berners-Lee, designer of the original Web protocols, was unaware of our work when he started around 1990. Evidently he had seen HyperCard, and what he created was essentially HyperCard(R) on the Internet.

Systems whose design was influenced by the Xanadu ideas, as acknowledged by their creators, include:

Lotus Notes, created by Ray Ozzie
HyperWave(tm), created by Hermann Maurer and team

Project Xanadu*

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Lotus Notes (created by Ray Ozzie)
HyperWeave (an, created by Tomoyan Maruyy and team)

MicroCosm(tm), created by Wendy Hall and team (and its offspring, Multicosm and WebCosm).

We also believe that the following were directly influenced by our work and talks:

HyperCard(tm), created by Bill Atkinson
Mosaic(tm), created by Marc Andreessen (under Larry Smarr)

Basic Xanadu Objectives

- High-power hypertext (much richer structures than "pages")
- Any number of overlapping, publishable two-way links made by any number of people
- EVERYTHING ANNOTATABLE (special case of the above)
- VERSION MANAGEMENT, with surviving portions viewable side by side
- RIGHTS MANAGEMENT by:
- Generalized permission for on-line re-use (now called transcopyright)
- Payment by each user for any downloaded quotation
- All quotations back-followable to their original contexts
- EVERYTHING FREELY REPUBLISHABLE

Basic Xanadu Method

All media contents get permanent addresses, so that they can be addressed by anyone independent of their documentary context. On-line quotation references these permanent addresses. All links reference these permanent addresses, so that the same links are always on the same content-- wherever that content is re-used.

EXTREMELY DIFFERENT CONNECTIVE STRUCTURE

Our connective structure is extremely different from that of HTML or any popular system. The Xanadu connective structure consists of both links and transclusions. If you are not willing to understand or acknowledge the simple difference between links and transclusions-- many people are not-- then you close the door to understanding the Xanadu system.

LINKS VERSUS TRANSCLUSIONS

In Xanadu structure, a link is a connection between things which are different, and a transclusion is a connection between things which are **the same**. This is explained in ***The Future of Information*** by T. Nelson, and in various articles to be found in our archive at Xanadu Australia.

More will be published here on these matters soon.

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